TOWN OF NEWINGTON
CONSERVATION COMMISSION

December 4, 2012
Special Meeting

I. CALL TO ORDER

Chairman Block: I apologize for being late. I'm going to call this special meeting of the Newington Conservation Commission to order at 7:04 p.m.

II. ROLL CALL

Chairman Block: I am Chairman Philip Block, John Igielski our Secretary is present, Dr. Catherine Marie Clark is here, Jeff Zelek our vice-chairman is here, Dr. Phil Shapiro is here, Andreas Sadil is here, and Alan Paskewich is the alternate for our vacant position, did I leave anybody out, yes, our town attorney Mr. Boorman is here, Chris Greenlaw, town engineer is advising us, and the secretary, Pete Arburr is here along with Norine Addis who is assisting us with stenographic ability.

III. ACCEPTANCE OF MINUTES

A. Special Meeting of November 13, 2012

Chairman Block: The first question is the acceptance of the minutes of our meeting of November 13, 2012. Any additions or corrections?

Commissioner Paskewich: Yes. On page 23, third paragraph, counting the first sentence ending, third paragraph down speaks to you, speaking to the tree, and actually I said that. It says, Chairman Block, speaking to the tree, do you know the functional values of that tree, actually I stated that. And going further down, Chairman Block again, was my name, would you say it is an indigenous specie to this area, and going down two short paragraphs, the spelling of my name is incorrect and going down three again, the spelling is incorrect.

Chairman Pruett: Anything else Alan?

Commissioner Paskewich: No.

Commissioner Zelek: On page one, Commissioner Sadil's name is misspelled, it should be S-A-D-I-L, I promised him we'd get it right eventually. The first paragraph says Chairman Pruett, should be Chairman Block, page 6, line 6 about half way through the sentence the word will, I think it should be with and also on page 13 I believe that it refers to Chairman Pruett and that should be Chairman Block.

Commissioner Clark: On page one, Peter Arburr's name is mis-spelled, I think there are three total R's in it. On page two and subsequently Dr. Abrams name is misspelled, it should be I believe it is A-b-r-a-m-s, not Abraham. Again, Dr. Abrams name is on page 5 in the large paragraph. On page 6 in the third paragraph, I believe the word is evapotranspiration, instead of evaportransperation, and I believe it is e-v-a-p-o-t-r-a-n-s-p-i-r-a-t-i-o-n. And on page seven, the inaudible term, is phytoremediation. On page 18, the first word on page 18 is substrate, all one word and the same word appears spelled the same way in the second large paragraph on the third line. On page 21, in the first paragraph near the end there is the word herbaceous, on page 24 in the third paragraph from the bottom I believe it is also phytoremediation, same word on page 30 in the second paragraph, again, it's phytoremediation and I think that's everything.

Chairman Block: May I have a motion to accept the minutes as read and corrected?

Commissioner Igielski moved to accept the minutes. The motion was seconded by Commissioner Zelek. The vote was unanimously in favor of the motion, with six voting YES.

Chairman Pruett: Now we reconvene the public hearing…..

Chris Greenlaw: Mr. Chairman, if I may, I just want to read into the record the notice of publication for the notice of this hearing. This was inserted in the Hartford Courant on 11/21 and 11/28, Notice of Public Hearing, Town of Newington, Conservation Commission Town Hall, Conference Room L101 Lower Level, Tuesday, December 4, 2012 7:00 PM. The Newington Conservation Commission will hold a public hearing to consider the following, Application 2012-22, for proposed forty-eight lot open space residential subdivision development at Russell Road north of Old Highway Newington by Toll Brothers, Inc., 53 Church Hill Road Newtown, Ct. 06470. All materials and plans relevant to the above application are on file at the Town Engineering Office, dated at Newington, November 14, 2012. Phil Block, Chairman, Newington Conservation Commission.

IV. PUBLIC HEARING

a. Application 2012-22, Russell Road North of Old Highway

Chairman Block: With that again, we are opening the continuation of the public hearing on application 2012-22. I would like to point out to all that we are still in a position of accepting information and having the various experts and consults correspond and relate to each other in order to get as much information into the record for us to consider as possible. With that, will the applicant come forward, do you have something to report?

Attorney Regan: No, I was just going, yeah, we have, several of our consultants have responses to some of the questions that were raised at the last meeting, so I thought we would start by making a brief presentation and responding to those questions which were addressed to us at the last meeting.

Chairman Block: Oh, okay, that's fine. We were anticipating having our people speak first and then you could respond to them as well, but if you would prefer to go first…..

Attorney Regan: I'm not sure if we would want to be responding tonight to what we hear as opposed to what we heard the last time, and had time to do our homework to respond to. I think it is our preference to respond to what we heard at the last meeting, the questions that we had and so we have prepared responses to those issues.

Chairman Block: Let's go!

Attorney Regan: Thank you. With that, I'll turn it over to Dr. Abrams.

Dr. Abrams: Dr. Ron Abrams of Dru Associates for the applicant. As Tom just said to you, we are prepared tonight to just talk briefly about the results of going out to the field and meeting with the town's consultants to try to resolve some of the questions that were raised. I have submitted, or will be submitting, Ray will be submitting a written response to those points that we heard verbally last hearing. We only received a written assemblage of further questions at the end of this week, so we are not in a position to answer those now.

So, we begin by, one of the things that we were asked for was to provide a compendium of our field results looking at the flooded basins, particularly basin two where most of the activity was, so what I have provided in the documents that you have is a inventory or listing or scheduling of what we did over the two years, 2011 and 2012 in terms of visiting the site, and looking for information that would assist in understanding the functioning of the wetlands in respect to their support of obligate (inaudible) aquatic quantum. One of the questions that was asked was, was the length of the study sufficient for the purposes that we undertook. That is to understand the ecological function of the wetlands, and our opinion is yes. The reason that we feel that is, having looked at the last eleven years of rainfall data for the area, and by the way, the rainfall data does include snow and is taken from the weather service, not our own data, what we found, and this was detailed in the November 8th submittal by Dru Associates where we actually listed the rainfall data and did a small amount of analysis. Over the period of the eleven years, four of those years would be characterized as dry with less than forty inches of rain, which is much like 2012. Four of the years were about fifty inches of rain, which would be characterized as very wet. That's eight out of the eleven years were widely varied, that's the character of this wetland and all of the organisms, the hydrology, the vegetation, are adapted to that obviously because they are doing quite well. The fact that we, by luck, picked a wet year and a dry year for our study makes us feel we got as much information as could be garnered by going into the field and if we went for a third year, I don't think we would see anything different in the way of understanding what is going on in the wetlands at the site.
As you can see from the chart that I put up, a great deal of activity, adults, egg masses, and larvae in the 2011 year and no activity in the 2012 year. And we began our investigations about the same time of the year as the ice melted off or as the ground softened up, and carried through into the summer and in fact this year we went a little further, 2012, just to make sure that we didn't miss anything.

Chairman Block: Excuse me, what larvae are you referring to?

Dr. Abrams: These would be spotted salamander larvae and you will notice in the chart I referred to tadpoles, so that would be the frog larvae.

Commissioner Zelek: Excuse me, through the Chair, which basin are we referring to, is this all three cumulative?

Dr. Abrams: No, these data are, well yes, I have both basin two and basin three in it. There wasn't much to report for basin three, but you will see for instance, under the 4/27 to 4/28 date in 2011, we did find a little activity in basin three.

Commissioner Clark: Could you explain, what, where it says for example, the egg mass, where it says Yes and then None is in parenthesis, does that mean that……

Dr. Abrams: Yes we searched, and none were present.

Commissioner Clark: Got it. Thank you.

Dr. Abrams: So the Yes, No refers to did we do that activity, and the parenthesis refer to what we found. Okay, so one of the other things that we were asked for was to map both the extent of flooding and the dispersion of the egg masses we found and the locations of the trapping we did, the stars are the locations for the trapping, and the numbers, the red numbers are for each rough area, you could draw a circle, for example, if you look at the forty-four and the thirty-two, if you drew a circle you would have the two circles touch and therefore that would roughly represent where we saw the forty-four as opposed to the thirty-

two. So this is for 2011, yes, you can see 2011 on the bottom and you can see the extent of the flooding, the light blue area with the flood line around it, the basin was pretty much as full as it gets, in one of the wet years. And in 2012, almost no flooding, no egg masses, the water was just too shallow for too short a time for the animals to migrate out and do their breeding thing. Would animals have come out and visited the wetland? Perhaps but as far as we could tell, they laid no egg masses and that's what we found.

Commissioner Sidel: What is the average snowfall for that type of area? I mean, you went from one heavy snowfall year to very, not a lot of snowfall in 2012. What is the average?

Dr. Abrams: Of total precipitation?

Commissioner Sidel: Of snowfall actually. I think this is influenced by the snowfall, the meltoff, what happens…..

Dr. Abrams: Well, it's our position that that wetlands is supported by whatever precipitation falls in the watershed and drains down on the surface and through the surface soil reaching the wetland. So, yes, snow melt is important but rain is equally important. The weather service in the records that we collated did not distinguish between snow and rain but my memory of the snowfall for 2012 was, what maybe six inches at the most, eight inches and in the prior year a more normal snowfall is fifteen to twenty inches in a big year, but I didn't break those out from the weather service. If that became necessary we could go back to the weather service and look for the data.
The next and very important exercise was to meet Rema Consulting in the field and look at the soils together which we did. What you see here is a map of the sample locations. I don't have, in the north we have an N1 and N2, we did do an N3 but it was clearly out of the wetland and I didn't include it here. In the center of the wetland, the E series, E3 was my original hole that I dug in the prior data, but we did revisit that spot, E2 is in the center, the wettest spot that we found on our visit and E1 is out of the wetland or just on the edge. There was an E0 which I don't show here which was completely outside of the wetland. Then in the south, S1 coincided with my first southern sample from my November 8th submittals and S2 and S3 were new cores that we did. I characterized the soils by using the Munsel Soil Color Charts and this is just a photo of N1, the location and there is a good close look at the soils that came out. We characterized as a dense clay and there are the actual soil samples removed to my office where we verified our characterization with the Munsel Color Charts and our characterization of the depth and character and I think it is quite well established that on the north margin and on the other margins the clay layer is quite evident. Here we have the results for the E series, which is the area in the center that is in concern and I point to the E2 sample, the deepest sample graded at 36 inches which charts out as a glade soil, a deeply glade soil. It's almost uniform in color, very light, very dense and as we dig deeper, it gets dryer. To me, evidence that this is a confining layer, keeping the water above, separated from anything below which would be sands and gravels. This is a deep sample from my original hole but it was taken on the day that we were there with Rema, just to reinforce that this is a sandy clay layer that is truly a confining layer in our opinion and I will ask Russ Slayback, our hydro geologist to make his own comments and interpretation on these results when he gets a chance just now. Here I have some of the southern samples, again, we're getting deeply glade layers which, and a dense layer that's in our opinion a confining layer, keeping the water above which is representative of, which represents the fact that we believe the wetland is supported by precipitation coming from above, settling into the basin and being held by the layered soils.
My next bit of information is the Schayler Method, the simple method of pollutant loading model which we were requested to perform. These results are typical of those found with any

sort of simple method analysis and we include those because Rema felt there would be some value in that and we will be interested to hear their interpretation.
Another issue that came up and that BL Engineering performed and gave the results to me about is the question about a hydrological budget for the watershed to feed the wetland. Their analysis resulted in a conclusion that in a hundred year storm, with all of the storm water management measures employed as are proposed, the main wetland, basin two, would see no more than a .3 inch rise in level. Now why is this so important? I'll get to that in a minute, but first I think Ray might want to do a little bit of explaining about how this watershed budget is derived, so you understand the significance of what I have just said.

Ray Gradwell: My name is Ray Gradwell, Project manager and a professional engineer with BL Companies here in Connecticut and as Ron mentioned, we were asked to help and assist to form a hydrologic budget to the wetland, central wetland on the site. How we did this, and we are going to distribute the results of that budget to Chris and his staff, likely tomorrow to addressed George's questions and concerns and his written comments also. How we did that is that we delineated the drainage area predevelopment conditions to the central wetland and established runoff curve numbers and runoff coefficients to that and determined the runoff volume to that central wetland. Then we determined the drainage areas, and post development conditions to this central wetlands. There are three (inaudible) to our storm water management pond, here, here and here and then we applied that volume difference predevelopment versus post development over the area of that central basin. The conclusions of that resulted in about a three tenth of an inch, which is a little more than a quarter inch of water surface elevation rise per the hundred year, basically the worse case storm event and once again, we are going to share those results with Chris and his staff as well as the Commission tomorrow afternoon.

Commissioner Paskewich: Question, where do you find your storm event rainfall today? The specifications, what source? What source do you find your storm event rainfall specifications for increases?

Ray Gradwell: The precipitation from rainfall, two, five, ten for each of the storms, those rates come from the Department of Transportation Drainage Manual. So you can apply a two year storm, twenty-four hour storm, two year storm, twenty-four hour storm, it gives you a runoff volume and right down the line. Those rates come right out of published results from the Department of Transportation and we also use technical papers that are on-line and technical releases.

Commissioner Paskewich: My latest current findings have found that EPA has the most current national specifications for rainfall increase and storm event now, and they have charts relating to that for states and areas.

Ray Gradwell: And it really depends on what county you are in too. In Hartford County their rate is a little bit different than New Haven County. Connecticut has a number of counties and each county has a different runoff rate, and that is what we use for guidance. We can check in that EPA handbook or manual that you are referencing and see how much different it might be from the rates we're actually applying to this site and determine if the differences are of significant value.

Commissioner Paskewich: Thank you.

Dr. Abrams: The one other issue that merits a discussion tonight is the finding of the swamp cottonwood. Jodi Chase had submitted to the National Diversity Data Base in Hartford a report of the species presence on the site. We have done our homework and understand its

character. The most important part of its character is that it requires to live in an area that is periodically flooded and in the literature there are comments to the affect that protecting the biometrical relationship of the plants to the wetland is very important. In other words, the wetland hydrology needs to be maintained in the condition to which the plants have adapted and of course, that is necessary to protect the wetland for the aquatic breeding fauna, the frogs and salamanders. So that is thoroughly compatible with our intent to control the drainage and return the drainage in both the natural pattern and natural volumes. Interestingly, while we were in the field with George Logan we took a good look at the area that I think it was Mr. Bachand pointed to, and a comment I believe in the hearing before last, maybe it was last hearing, where there is a low point to the west of the wetland basin, basin two on the path, a very well developed and heavily trodden pathway. It looks as if someone had cut a little trench at some point in the distant past, perhaps a farmer trying to drain the wetland, and it appears to us, at maximum flood, in other words in the hundred year storm, that would be the controlling point for the level of the wetland because if the water rises up far enough, it's going to run out there and go down the hill toward wetland one, or the western watercourse. This feature shows no evidence of recent flooding, or recent drainage but it, in terms of elevation and topography, it would be the location where because this basin is completely under laying by a confining layer when it rises up far enough it's going to flow out. That means that if we don't alter that character, we will be in a position to maintain the water volumes as they have been naturally occurring in this wetland which in affect would protect the swamp cottonwood and that pretty much brings me to the end of what I want to say but I do want to invite Russ Slayback up because he too has taken a look at our soil samples, the topography and the hydro budget and as a hydro geologist I'd like to hear his comment about what we have learned about the character of the substrate.

Chairman Block: Yes, Dr. Abrams, number fourteen regarding the swamp cottonwood, the sentence, this population is somewhat resilient but may not be extending to seedling reproduction, hence they may be dying out. Did you do any sort of a population count as to seedling versus mature?

Dr Abrams: Yes, that is in the data form. Jodi has put her estimate of the ratio. Her ratio is seventy percent mature to thirty percent senescent, and there was no real evidence of seedlings or real youngsters.

Chairman Block: The meaning of senescent?

Dr. Abrams: Old and dying. Toward the end of their life span. These are not long lived trees so, seeing the full cycle in the population is possible that what we are seeing is the top end of the cycle and the population as far as we saw.

Chairman Block: Thank you.

Commissioner Igielski: Dr. Abrams, would you identify on that slide where that trench is that you spoke of.

Dr. Abrams: Sure, sure, no problem. Sorry, Russ. The location is approximately here.

Commissioner Igielski: And running in what direction?

Dr. Abrams: Well, that would be down hill. It's very short. The slip trench I referred to isn't more than ten feet and it's on the wetland side of the path. The other side has sort of a low area but just rely on the fact that the topography drops off downward in this direction.

Commissioner Igielski: So drainage from that wetland would be westerly towards the lower wetland.

Dr. Abrams: In super floods when it's maximally full, some water would go out towards this direction however there is quite a bit of irregular topography as you go from here to here so I don't think there would be a stream, it would just go over the edge and spread out.

Commissioner Igielski: Sure. Could you also identify where the swamp cottonwood trees were found, what general areas?

Dr. Abrams: I think your handout has a sketch map in it, yes you should have that.

Commissioner Igielski: For the general public could you just indicate up there based on that print?

Dr. Abrams: If I remember correctly, there were some in this area, and some up in this area.

Commissioner Igielski: Okay, thank you.

Ray Gradwell: With respect to that map storm drainage in that central basin, if you have a chance to get into the storm water report, we did model this area, and that low point as discussed by Ron as a weir, so as this water surface rises within this central wetland we modeled that and ran that as a pond, as a basin and let it spill as it does today towards the west so we are not actually doing anything to that natural central wetland or where it is going to drain in the future.

Russ Slayback: Again, I'm Russ Slayback, a hydro geologist……

Chairman Block: I'm sorry….

Commissioner Zelek: Regarding that causeway, or overflow did you say that in a flood situation or high rain situation water would flow from basin two, let's call it basin one. So, it's going to flow westerly…..

Ray Gradwell: This central basin will fill up with water and that low point, that path that everybody seemed to use, is roughly in this area, and that water will flow up, get to a point where it will flow west.

Dr. Abrams: I want to clarify, it's not a stream flow. It's, most of the time when this wetland is full the water is going to leak out of the edges, the clay layer fades or breaks up as you get away from the wetland. That N3 sample that I didn't include in here, but we could if we had to, the clay layer was fairly well gone. And we saw that also on the E-0 sample on the eastern side. What happens in a basin like this is the water is held by the clay, silt, sand layer and it's a little bowl like, when it fills up, when it maximally fills in the hundred year storm it will seep out through that low point, but the water is still seeping out of this wetland when it fills up, either evaporating or seeping sideways, but we saw no evidence for a flow. There was no channel, there was no erosion or scour, so this is just an enhancement of the seepage, it's not a real flow and that's an important distinction.

Chairman Block: What your saying then is that the natural drainage is to the west through the soil substrate, once it reaches above what the barrier point is.

Dr. Abrams: Exactly. Whatever water leaves this basin horizontally is obviously going down hill in this direction, but it's actually entering the soils and seeping through the soils, or else over evolutionary time we would see a stream channel, which we don't.

Commissioner Zelek: I just want to understand that perhaps we might have an intermittent water course.

Dr. Abrams: I don't agree with that.

Commissioner Zelek: I'm not saying that there is, I'm just trying to establish whether there is or not, and you can give your opinion on that, and I also would like Rema to respond to this question when they do their presentation.

Dr. Abrams: Mine, it is not an opinion, there is no evidence. There are definitions for intermittent water courses which requires some sort of channel, some sorting of stone or material, something to show the physical evidence of movement of the water, and none of us saw that there.

Russ Slayback: Again, I'm Russ Slayback, hydro geologist with the firm of Kepper, Shears and Graham, headquartered in Shelton, Connecticut. I think I explained previously that I'm a geologist by education and a hydro geologist by work experience. My first point comes from the geology standpoint. Dr. Stein pointed out that the topography on this site was caused by the glaciers as they moved through this site from north to south and the wetland one and wetland two are particularly areas that represent glacial carving. And then when the glaciers retreated some twelve thousand years ago, these basins partially filled up but after the retreat of the glaciers this clearly became a very slow water movement pond. It was a pond that contained silt, and (inaudible) material and that formed clay. The depositional environment is what I want to speak to. When I saw Ron's soil samples they were exactly what I expected. They should be everywhere present in this wetland area because of (inaudible) deposition. They ought to be everywhere at almost the same elevation and they should only vary a little bit in thickness.
The second point is with reference to George Logan's comments and questions about whether we had considered pizzometers, and as a hydro geologist I have designed and implemented monitoring programs using pizzometers for decades. Before you engage in any program with pizzometers you try to consider what you are going to learn from the pizzometers and in this setting we would have I think three choices of pizzometers. One would be in the very shallow organic soils, and they would simply reflect the water level in the wetland and when the wetland is dry the water level below surface held above the clay. If you installed a pizzometer cemented into the clay it would be totally unresponsive because the permeability of the clay is so low water moves at exceeding slow rates and the pizzometer just would not work, and the third choice then is to put a pizzometer below the clay into the ablation glacial till and granular soils that we know under lie the clay and that would simply demonstrate that the clay is impermeable which we already know. That's all I have, if anybody has any questions.

Commissioner Paskewich: I do. Why are we defining the clay so evidently? Are we trying to say it's part, in part parcel that it makes a wetland not a wetland?

Dr. Abrams: No, no, no, not at all. This is what holds the water for the wetland.

Commissioner Paskewich: Okay.

Russ Slayback: And that is why we believe that that wetland is supported almost solely by runoff, surface water runoff and runoff through the upland shallow soils, seepage in those soils, but not by any upwelling from ground water from underneath, which some wetlands do demonstrate.

Commissioner Paskewich: So all the basins that were monitored or investigated have those same soil types?

Dr. Abrams: No, basin three the isolated one to the east has a little bit of sandy, silty clay, but it's much more permeable and it's not a defined layer, that's why it dries out so quickly. The water course has a mosaic of soils but because of its physiography it's all running downhill so there isn't really a location that developed this type of basin for collecting the water and that's why that water course dries out pretty well when the precipitation supply is gone.

Commissioner Paskewich: But we are still identifying those as wetlands?

Dr. Abrams: Oh, they meet the criteria for Connecticut wetlands yeah, I don't think there is, I think from the start of this project the definition and delineation of the wetlands has not been a matter of disagreement.

Commissioner Paskewich: So why are you producing so much evidence on these soils if they are already wetlands.

Dr. Abrams: These questions that we are answering tonight were raised by Rema.

Chairman Block: Let me respond to that again. The concern that precipitated this is that the basic bedrock, and please correct me if I'm wrong in any of this, is fractured basalt with a lot of vertical cracks. It was believed that the reason for the existence of the wetlands is because the fine silt sediment have sealed the cracks preventing the water from draining vertically and therefore it's a perched water table and we were concerned as to whether or not the development of this site is going to disrupt that waterproofing, thus causing the wetlands to drain. I believe the testimony that we have been hearing tonight is that the extent of the silt and clay soils in this particular areas specified is thick enough and permeable enough that this is what has created the wetlands. The question which I hope they will then go on to answer I think was stated somewhat hopefully last time was that the location of the blasting and the amount of rock disruptions is not likely to disrupt this membrane and therefore the wetlands will be properly preserved.

Russ Slayback: I concur with everything that you said Mr. Chairman, except that in my opinion the upper part of the basalt, the trap rock, is fractured and jointed but as you go deeper into the unit there is very little fracturing and the joints become much tighter. Other than that I agree with what you said.

Commissioner Sadil: How deep is that, can you give some sort of level when you talk about the upper layer, and give me some sense of depth?

Dr. Abrams: The depth of the soil, the clays?

Commissioner Sadil: The basalt layer the Chairman was mentioning. What…..

Russ Slayback: The stone? I don't know. It's measured in hundreds of feet and I'm talking about it getting tight say, with thirty to fifty feet to the top of the rock.

Chairman Block: Again if I can offer, if you take a look at the cut, at the roadway, you, particularly as the winter progresses you'll see the ice and the drippage through the higher, upper open joints.

Dr. Abrams: And just to wrap this up to paraphrase something Mr. Logan said to us in the field, was that with confining clay, silt, sand layer surrounding the basin and everywhere that we measured such a layer likely extends all the way beneath the entire basin which agrees with what Russ Slayback has said and what we found in our soil samples. So we do believe that this wetland is safe from disturbance by blasting.

Chairman Block: Anything further?

Attorney Regan: I think that's it for our comments in response to the comments of the other evening.

Chairman Block: Thank you very much. With that, unless anyone wishes to take a short break we'll go on to Mr. Hosley, our consultant on the blasting geology.

Richard Hosley: Good evening, my name is Richard Hosley and I'm with Connecticut Explosives Company, geologist by study and an explosives engineer by dedication and study through history. I am going to start by saying at the last meeting we came up with a series of questions, we being the Commission, the Town Engineer, myself and our review of the application, and have created a list of questions regarding blasting relative to the project, Newington Walk and that series of questions was submitted to the Commission and to the applicant and…..

Chairman Block: Mr. Hosley, if you may I think it might be simpler for the Commission and the public to absorb if we went through the questions one by one and let you explain the response that you received and your understanding.

Richard Hosley: Okay.

Chairman Block: And the first was simply, what's the construction sequence and the time frame for the project?

Richard Hosley: Question one is a question that is directed to the specific location or locations on the site that will be under construction and when to get an idea of when that work will take place and how it will progress across the map that we have viewed. The question is relative to the run off areas and the drainage as the project is being built and the length of time that may pass while that construction is in place and although I have had some discussion with the applicant's engineer regarding this at this point we have not resolved that question, so we are in the midst of working on that.

Chairman Block: Okay. The next concern was the blasting sequence and the time frame for that part of the project, and that was also raised by the Conservation District's review.

Richard Hosley: Essentially that is very similar to the first question except the question is directed to specifically where the blasting will start and through what time frame and how that will advance across the project and how that will be for effect the runoff and erosion and sedimentation control. Again, we've been in discussion with the applicant's engineer regarding this, but this question requires further clarification before we can really report on it at this point.

Chairman Block: The third question was whether there is an estimate as to the amount of rock and soil, over burden if you will, that is going to be moved by the process. Have they given you any information on that yet?

Richard Hosley: Yes, the engineer for the project has submitted some documentation, the engineer has provided us with a slide on the cuts and fills of the project from different shading, and this is just a small section of it and we have discussed the rock quantity of sixteen thousand yards to be removed from the site, or blasted on the site I should say, sixteen thousand yards of rock, that must be displaced. I'm under the impression that there is approximately seventy-one thousand yards of soil that needs to be cut, but again, I think that the applicant can help to clarify that pretty simply. We also inquired about the amount of trench rock that is involved, or will be displaced and again, these are the questions that we submitted for the last hearing, and want to expand upon.

Chairman Block: Have they provided you a plan for the actual blasting?

Richard Hosley: A blast plan has been forwarded to me which represents an addendum from the Planning and Zoning application and that will also require some clarification or adjustment from my perspective just so there is some flexibility within the implementation of this design. I think what has been submitted is an appropriate starting point for the blast plan, but again, it should be expanded upon and is certainly is dependent upon the evaluation of the blasting contractor that will be involved in the blasting.

Commissioner Paskewich: If it's flexible when and how would they determine that plan?

Richard Hosley: Well, there is an evaluation process by which the engineer has included on the print, in the print in the general notes and he has stated twenty points which we have not yet mentioned yet but are on the print and is included in the print and those help to refine how the blasting would take place by establishing the credentials of the blasting contractor and the individual responsible for the blasting. It establishes the regulatory criteria established by the local governments, Newington and Wethersfield, the State of Connecticut and the Federal Government relative to the parameters by which the blasting contractor can operate. They have gone further as to suggest or include the fact that they would perform a test blast to evaluate the site specific nature of the geology described by Russ Slayback and the others on this site, which I agree with. So there is a protocol established and that was in place for the Planning and Zoning application and what I have received are copies of what appears to be the addendum of the Planning and Zoning application from the applicant.

Chairman Block: But those are general if you will criteria for any blasting, not anything that is directed towards the wetland concerns.

Richard Hosley: Yes and no. That criteria is designed to protect any and all structures outside of the blasting area through a test, through a review application and test protocol. What I have suggested to the Commission is a method of reviewing the responsibilities for the blast design, the blast implementation, determining an applicable blasting contractor, or blaster for the job that is parallel to what has been submitting to Planning and Zoning but requires more detail.

Chairman Block: Are there proposals as to parameters for the acceptable results of this test blast program? Again, if they do the test blast, how do we know whether or not it's too much or too little, too close, too far?

Richard Hosley: As they have stated in their general notes, subcategory blasting notes, in the application, they have identified, the applicant has identified how to review and what to look for in that test blast and how to control it relative to ground motion criteria established by the U.S. Bureau of Mines. As I stated, I reviewed these blasting notes which look like this on the print, and have identified some questionable areas and am in discussion with the applicant's engineer to clarify.

Chairman Block: And have they responded to those yet? Have they had time to?

Richard Hosley: I think there is still further work to be done.

Chairman Block: Lastly, do we know who is actually going to be responsible to oversee and maintaining the blast plan?

Richard Hosley: Specifically we do not but in the blasting notes which is part of the submittal of the application there is a line item that says, there is a line item that qualifies how that is to be handled.

Commissioner Paskewich: I recall reading the notes today that there is going to be a third party assigned to monitoring this blasting. Who would that be?

Richard Hosley: Third party designed to monitor the blasting.

Commissioner Paskewich: Yes, I read that…..

Richard Hosley: That would be presumably a consultant hired by someone to review that process.

Commissioner Paskewich: So we will need that name at some point I would hope.

Chris Greenlaw: Is that part of the questions that you are going to refer to, with the engineer in terms of what you are saying over and over again, you need more time for?

Richard Hosley: Would you repeat that question?

Attorney Boorman: Is that part of the information that you would look to get from the engineer from the applicant…..

Richard Hosley: Who the blasting consultant will be, to oversee that?

Attorney Boorman: All the questions that you just referred to, including the last one.

Richard Hosley: I think they will be answered when our original questions from the last public hearing are addressed.

Attorney Boorman: And how much more time do you need to do that?

Richard Hosley: I'm awaiting communication with the applicant's consultant.

Attorney Boorman: So you are waiting to hear from them how much more time.

Richard Hosley: Right, regarding these five basic questions, and then further refinement of the blasting notes and the blasting test plan that they offered me at this point.

Attorney Boorman: So you are waiting to hear from them before you can proceed.

Richard Hosley: Yes, but we've been in communication, and they are aware of that. We spoke today as a matter of fact.

Attorney Boorman: Okay.

Chairman Block: Anything further? Thank you until next time.

Ray Gradwell: Mr. Chair, the report Mr. Hosley is referenced, the blast plan, I'd like to pass that out to the Commission also. Mr. Chair, one further thing, Mr. Hosley and I did speak today for almost an hour, an hour and a half, at least an hour and a half about the notes, the general notes, the blasting notes, the blasting procedures and we are on top of that. We should get that information back to him within a couple of days.

Chairman Block: Right. I appreciate communications between you to get the information resolved. Again, and only within the context of our concern to be able to digest all this properly we do have time restraints, so as much as haste as you can generate in getting this together so it can be reviewed and presented to us before the time for our decision making expires. So, I think we are making good progress, but the more the better.

Commissioner Clark: I do have one question. I think I just didn't understand the procedure so some of the testing will obviously take place after an application would have been approved so in your experience in past cases what can happen, can you find something that you wouldn't expect to happen and then have to change your blast plan somewhere after construction has begun?

Richard Hosley: That's a great question. The blast plan is in constant evolution which is why I have a problem with what is submitted. What has been submitted is generally a small window of, this is how it should be done. And although that may work, I think as the blasting progresses across this site, there needs to be, by those parties involved, blasting contractor, the blaster who is in charge, the blasting contractor who he works for, the excavating contractor, the general contractor, all of the people involved in this need to evolve or need to modify the blast plan as it changes. For example, depending on where it will start, where the blasting will start which is our first question, there may be relatively deep blasting to install utilities, or it may be very shallow blasting to get the roadway or the house foundations in place. That time frame is very much indicative and that change of parameter is very much indicative of how the blast design will change. So what we would like to do is see a test blast range which becomes tighter in certain areas depending upon structures of concern which is what the applicant or the engineer has reported based on the government guidelines of limiting ground motion and noise and dust and that sort of thing, so, as the project progresses, there will be changes in water content due to weather changes, the time of year that this is executed, productivity based on what the scope of this job includes. Are we going to get it done consistently in a certain amount of time or are we going to do one phase and wait and do another phase and control, all of those parameters in terms of time frame affect the overall blast design, truly.

Commissioner Clark: So again, is this common to any site that a similar Commission might be making a decision on……

Richard Hosley: It is.

Commissioner Clark: But you can't really know what's, you're approving something that needs to be subject to change.

Richard Hosley: Correct. That's my point, but there's a way to evaluate that and the way you evaluate that is, number one, reviewing the qualifications of the contractor doing the work, blasting contractor, blaster. As the engineer has pointed out in his engineering notes, making sure they are qualified, licensed, insured, federal law, that sort of thing. Number two, reviewing a pre-blast plan, okay, this is how we are going to do it, does this make sense, does this work in the parameters of the scientific or engineering nature of explosive engineering. Number three, someone is going to review that plan. Whether it is a representative for the applicant or a representative for the Town, someone has to review that plan and say, that makes good sense, let's move forward with that. Then, with that pre-blast plan which would include notification and pre-blast surveys and determining what structures we need to protect at this location, or that location, for example, the wetlands, or an old home with horsehair plaster, or weak construction material then they would implement a test blast and that test blast would occur in an area that is relatively distant on the site from the structures of concern, and then the results of that test blast can be evaluated. In other words, they might, they will certainly monitor the ground motion, and the sound, the vibration and the sound that would occur from the blast. They would evaluate the heave, how much rock is displaced. There would be an evaluation of how much rock they were able to dig out from that test blast. In other words, if that test blast were twenty by twenty can they dig out thirty by thirty or twenty-one by twenty-one. All of these parameters are very site specific based on the geologic structure of the geologic setting, the depth of the cut, how much rock they are taking out, the weight of the charges that they place, the separation distance of those charges, whether or not the ground is wet or dry, there's more, so, implementing the test blast, okay. Then after the test blast is implemented, a production blast or sequence begins and then there needs to be a review of that production sequence okay, we've done a test blast, this is how we are going to migrate further. That's also monitored to make sure it conforms to state, local and federal regulations. It's also monitored for over fracture and of course because we are asking for that time frame and that location of where they are working, we are assuming that they're going to, the applicant is going to qualify working in an area that is further from those structures that need to be protected, whether it's flora, fauna, habitat, wetlands or older home with horsehair plaster, that kind of thing, or utilities, fiber optic cable, water, what have you. Those are just general statements that may not apply to this project, but that sort of thing is the standard practice that takes place during what we call the responsibility or review for the blasting contractor. That is typically in place by the engineering firms for these large projects before they are executed, before they are initiated. What is often referenced in history is this information necessary to protect residential or commercial structures. There is not a lot of history of blast design relative to protecting wetlands per se, but the application of such is the same because what we are talking about is limiting the amount of area or rock that is not affected. We're limiting the amount of rock that is affected from the blast and it is done by reviewing the process as it migrates closer. I feel comfortable that at some point in the future and as a result of these test blasts and production blasts we can evaluate or predict a stand off distance relative to the depth of the rock. For example, if they are removing ten feet of rock, we're going to call a stand off distance of four to one, in other words if they are removing ten feet we're going to stand off forty feet. That sort of thing, but that sort of information has to be evaluated by going through this whole review process to be verified.

Commissioner Paskewich: And who would review that?

Chairman Block: Well, let me ask this before, in looking at the handout that we just received from the applicant I note that in item 7 and item 8 it claims as a test blast, so even though it's

entitled the Newington Walk project blast plan, would I be more correct in considering this to be the plan for the testing rather than for the general production of the development.

Richard Hosley: Most certainly. I believe that is the case, and I believe that is how it has been presented.

Chairman Block: Okay. Now again, we have an upland review area surrounding the wetlands. When you talk about parameters is it appropriate for the applicant to come up with some parameter of their production blasting that they can represent to us with not create the seismic thrust of this to that, that the test plan is supposed to determine? Should we know what those parameters are beforehand? Is that a yes?

Richard Hosley: I think so, yes, most certainly. But again, I think what is really important and critical to this is that something is not put into place that says, this is the way it has to be. There has to be some adjustment and flexibility relative to the changing conditions that exist. As you migrate closer to structures that you wish to protect, regardless of what they are, there are various changes that need to occur to ensure that protection.

Chairman Block: So again, would the consultant's supervisor that was referenced, be somebody that the town should be employing to make sure that this plan evolves as we want?

Richard Hosley: That is relative to how critical or how close they approach that particular structure, I believe in my personal opinion.

Chairman Block: Okay, lastly, just, lost my train of thought. Alan, you had a question?

Commissioner Paskewich: Actually I'm going beyond that, since you hit on it. On the second page of the blast plan, that was given to all of us, moving down to areas within 300 feet from wetlands. Can you define what ANFO means? Exclude the use of …..

Richard Hosley: ANFO is an acronym which stands for ammonium nitrate and fuel oil. Ammonium nitrate and fuel oil are the chemical compound that consists of ninety-nine point nine percent of all the explosives consumed in the world today.

Commissioner Paskewich: But it says, exclude the use of.

Richard Hosley: Their test blast recommendation is, if I'm not mistaken, and I'm reading this as you were reading it, that areas within 300 feet from the wetlands, when you approach a wetland and you are within 300 feet of it, that's easily defined, I'm sure they could map it, anyone could map it, the test blast is suggesting not using ammonium nitrate and fuel oil.

Commissioner Paskewich: Would you have any opinion as to why they pose that.

Richard Hosley: Hmmm, do I have an opinion? I believe this is extremely restrictive and should be excluded from the plan, my personal opinion.

Commissioner Paskewich: So they are being more cautious than you.

Richard Hosley: Correct.

Commissioner Paskewich: Good, let's give credit where due.

Commissioner Zelek: So in your opening comments you mentioned that there's 16,000 yards of rock displaced.

Richard Hosley: That was one of the questions that I asked at the last public hearing and we belabored that subject on the phone today with the engineer, and my understanding of that final answer is there is 16,038.05 cubic yards of rock to be cut on this site if I'm not mistaken and obviously that is a question that we can ask the engineer.

Commissioner Zelek: Now, topsoil, how much?

Richard Hosley: That was not presented to me but in our verbal discussion it was clarified that there is approximately 71,000 yards of soil to be cut on this site if I'm not mistaken.

Commissioner Zelek: Now, your observation of the plan, does that mean they are removing that soil to get down to the rock and then begin the blasting?

Richard Hosley: I mentioned that I belabored this topic with the engineer and I'm not really clear on that because I received these, I'm going to guess 1200 points of cut and fill locations and I sort of pieced them together, just for my own notes, but this is essentially what the project looks like, blue would be fill, red would be cut, I've asked for clarity on this, but my understanding is, there's 87,000 yards of material approximately that needs to be cut from the site. Of that 87,000 yards, 16,000 of that is rock, approximately and 71,000 is soil.

Commissioner Zelek: Okay, and what is the site's current condition there, are there old growth trees, large maples, large oaks?

Richard Hosley: That's not my expertise, but upon review of the site, walking it, there are definitely those specific types of trees.

Commissioner Zelek: So Mr. Chairman my concern is if the amount of soil being removed is dramatic once this site has been graded and all the work done, will there be enough soil returned to the site to support large trees eventually, or will large trees be precluded from this site for perpetuity? It will never, ever support large trees again.

Chairman Block: Not only is that an interesting question, but if the, raise that diagram again, the colored one….

Richard Hosley: Sure, and again, I saw briefly at the last hearing….

Chairman Block: This is really to illustrate a point of confusion in my mind at least.

Richard Hosley: Essentially this is what the project looks like, more or less….

Chairman Block: And you state that you were told that the blue represents fill.

Richard Hosley: That's what this diagram represents, so I think we should direct those questions to the engineer since he is in the room.

Chairman Block: Well, that's what we are doing, via this vehicle. Fill is added, that means on top of what is there, to me. That doesn't make sense.

Ray Gradwell: If I may clarify that, Rick and I spoke about that. What this blue area is, this is soil above rock so all that blue is soil above rock. These light pink areas, that's where we are actually going to do rock excavation.

Chairman Block: So we go back to Jeff's question now, does it also mean that this soil is going to be removed in it's entirety.

Ray Gradwell: No. No it's not. We're going to be cutting and filling to create proposed grades and soil remaining above rock is just shown in blue.

Chairman Block: Okay, and then lastly to go again to Jeff's question, is, in the plans that have been submitted, or will they need to be amended to show the amount of usable soils that will remain on the various lots and areas afterward, after these cuts and fills have been made.

Ray Gradwell: This diagram shows that, and we shared that with the Commission, and we shared that with Rick, it ranges between eight, ten, twelve feet of fill for soil above rock to be left on site in places and it ranges and in shallower areas of course there will be three or four feet of soil above rock, it could range to fifteen, twenty feet of soil above rock in certain areas.

Chairman Block: Are you in a position to make a clear statement as to the amount of soil over the entire site as far as it's ability to be revegatated, to support trees, bushes, whatever.

Ray Gradwell: I'm not a landscape architect so I couldn't tell you, but it could sustain vegetation, grasses and chick trees. I can bring a landscape architect here to explain the depth required for a tree, a large tree as Commissioner Zelek mentioned to be sustained on site, and report back to you, or provide a written response to that question.

Chairman Block: Well, before I impose that on you, what's the Commission's interest in that information?

Commissioner Zelek: I'm very interested.

Commissioner Paskewich: Expand a little bit more, if there isn't enough top soil and we have blasted sites, and there is rock that's crushed and sitting under the top soil which can happen because it's not grinding all of it, you're not taking all out unless they put that in contract, sometimes the rock emerges through the soil over time.

Chairman Block: So, again, are you interested in having them provide this information?

Commissioner Paskewich: Yes.

Ray Gradwell: We can provide a written response to that.

Chairman Block: Anything further.

Richard Hosley: My question, my interest in this or I think the Commission's interest is where are we going to be blasting, and what are we trying to protect. That's what I'm seeking by inquiring about this location and this map and how these points of cut and fill come up and what they represent.

Chairman Block: Well, I'm assuming that you are going to be continuing your discussion and report back to us at the next hearing.

Richard Hosley: Hopefully

Commissioner Sadil: The question that I had, the blue areas, can that be removed by mechanical means versus explosive.

Richard Hosley: That's a good question. I'm still trying to clarify that, but my understanding is yes, that's correct. The explosives will only be utilized in the pink area, and relative to the entire site, or relative to the 87,000 yards of material to be removed, the blasting areas are a small portion of it.

Ray Gradwell: I would concur with that response.

Chairman Block: Does that statement include the blasting necessary for the various utility trenches and foundations?

Richard Hosley: It does not and that was question number three I think from the last public hearing. We asked for the mass rock quantity, which is described as 16,000 yards, but there has been no response as to the quantity of trench rock. Certainly that trench rock quantity will be below finished rate, per se, so you won't essentially see a change in the topography but blasting will occur there.

Commissioner Zelek: What is the difference between mass rock and trench rock?

Chairman Block: Mass rock is general recon touring of the surface, trench rock is rock removed for the construction of a trench.

Richard Hosley: Utilities. Utilities could be footing drain, water, sewer, storm sewer, that sort of thing.

Chairman Block: Anything further at this time? Thank you.

Attorney Boorman: I would just like to emphasize to the two of you that these outstanding issues that the Commission has raised, there is a time table for us, so we are going to be rescheduling for the continued hearing and we've asked that these questions be completed to the best of your abilities for the next time we come through. If there is more that needs to be done, you'll let us know, but we certainly are looking for these answers to be promptly presented and hopefully promptly presented would be by the next public hearing continuation date. You'll hear us talk about that before the evening is through.

Ray Gradwell: And through the Chair, absolutely. That's why Rick, Mr. Hosley and I spoke at length today so we can come to a consensus on blasting notes, Doug at DRS and I are going to communicate tomorrow about the blasting plan that Rick has talked to Doug about and I have talked to Rick about, we are working on that and within a couple days Chris and the Chair will see that information.

Richard Hosley: And I think that will provide clarification to the Commission.

Chairman Block: Thank you again gentlemen.

Commissioner Clark: Will we be provided with that, we the rest of the Commission members be provided with that information prior to the next meeting?

Chairman Block: Chris will put together a package as soon as we have it.

Ray Gradwell: And what we will be doing with all the application information, we have been sharing this with Chris and basically all the consulting reviewing teams is posting it on our FTP web site so staff has an opportunity to look at it, Rick has an opportunity to look at it, George and Sig have an opportunity to pull that information off the site, look at it in PDF form rather than unrolling a set of plans so obviously Chris you can share that with any of the Commission members also if they would like to look at the chronological history of the application as it has been presented to the Commission. It makes it a little bit easier for staff and the Chair to look at that information.

Chris Greenlaw: Just as a point of note, on that note, additionally, if you have that electronically, which I know that you do, let's put it up on the screen so we don't have to hold an 8 ½ by 11 on the wall so everyone can see it as well, as far as the public.

Chairman Block: That's for the next meeting. Thank you.
I would like to ask Mr. George Logan of Rema Associates as to his investigation.

George Logan: Good evening Mr. Chairman, Commissioners, Applicant, Public. The last time that we were here we did pose a number of questions for the, to the applicant as you will recall. Subsequent to that, it was truly our intention to get to the questions in written format to the applicant by the beginning of the Thanksgiving week however, I was out of the country and my associate had an unfortunate happenstance and we were unable to do that. She was involved in an accident, a serious accident. The memo that I hold in my hands has been forwarded to the applicant, I believe through Chris, as the date of November 28th, last Tuesday, it was generated and I believe it got to the applicant a day or two after that, so the applicant hasn't had perhaps enough time to get into the nitty-gritty and therefore some of the questions have not been answered and that is understandable. Speaking briefly, we understand that these questions will be answered in the near future. As I look at the information that the applicant did provide I do have a few questions and a couple of comments to make. They are brief, because what we want to do is truly digest and analyze the information that Dru Associates has put into the record. I understand, hearing from Ray that information will be going tomorrow regarding hydrologic evaluation of the water budget if you will in wetland two. We look forward to that and looking at it and have some additional questions as we go through that information.
If there are additional questions that are generated by further review, then a review will probably happen, of this document here which is what we received today, over the next couple of days and we will make sure that additional questions for clarification goes to the applicant and we would ask the applicant also, as they look through our questions, if they have a specific question or clarification of our questions, that they reach out, I know they tried to do that today, unfortunately I was in the field all day, so that didn't happen.
Looking through some of these answers that we got, the ones that are perhaps pertinent, under five, I think the question was what was the advocacy of (inaudible). I'm not sure I exactly said that, but the question there was, we have a herpe tunnel that is supposed to connect at least for the species pool number three to pool number two. At the last hearing the applicant provided some information based on some studies that had been done regarding the advocacy of herpe tunnels or wildlife tunnels in general. The question that we further qualifies is that we would like to see if the applicant can come up with localized, regional information, southern New England type of information for the advocacy of such tunnels. We understand that overall national studies are applicable but we were looking for more local information, regional, southern New England.
I need to make a clarification I think in fairness to both of us regarding our common field survey that we did on November 15th. I think it was a Thursday. We spent a couple of hours out there together, Dr. Abrams and his associate and myself and joined soon thereafter by my associated Sigrun and soon thereafter by Jodi Chase who was probably more interested

in looking at not so much the soils but the swamp cottonwoods. We did observe that dense silty clay layer on the periphery of the vernal pool area, both to the north and east and then later when I left, it was observed by my associate in the southern portion. That is the S series. One thing that we did not do, and we had a slight disagreement here but we will be able to get to the bottom of it, and that's soil exploration at E-2 which was at the more or less geographic center east/west of the vernal pool, that's the area where very close by and just a little bit to the south I basically buried my auger which is two, two and a half feet long, into softer organics. I never at that point, this is before November 15th, encountered a clay layer. On November 15th, we had a similar problem in that we weren't able to at least in my estimation, find a similar silty clay loam as we had found along the edges of the system. We kind of ran out of auger again but we did hit, as it shows here and Dru Associates reports a, somewhat dense, somewhat compact sandy layer, fine sand, which means it was influenced by water. But we never found the silty clay loam. In the field I did and Dr. Abrams is correct is saying that I apotheosized it, well mostly likely the clay layer must be there, must continue from the edges to the middle of this system, but we really never saw it. Leaving the field and thinking this through, we would have wanted to see if we could get auger extensions to go a little farther down and find that clay layer. I mean, I can apotheosize all I like, but empirical data always trumps my speculations or anyone else's speculation. We reached out to the applicant Thanksgiving weekend, to propose we go back and look at these central areas, so we can understand the underlying hydrology but because of Sigrun's car accident and me being away, in Europe, we couldn't do that. It's still a question so I would propose to the applicant, it may be worthwhile so we are not sitting here and saying is it, or is it not, we go back and figure that out. Because, if the clay layer is not there, once again, I speculate that it is there, but I don't know, if it's not there, the interface of ground water and the surrounding area is a different animal because it's a different situation.
Another thing that we didn't see and I'll go in and look at my data and probably produce my data so we can compare it, one of the things that I saw, particularly along the east side, as we were taking that E series, E-0 which is not on the plan, was up on the slope and then we had E-1, E-2 and the E-3 was on the other side, E-2 was the center. But I noticed in E-1 there was a layer of almost glade sand, a very loamy fine sand and it was glade, which means it was influenced by water and that was above the clay level. So I think what is happening in that situation is that there is shallow ground water influence, from a point eastward up the slope, water percolating into the soils and reaching perhaps the bedrock or the till in relation to moving in a westerly direction and expressing itself within that layer.

Chairman Block: I'd like to ask if I understand what you just said correctly. You're saying that there is shallow permeable soils uphill from the wetlands and that the water is draining through those materials into the wetlands and then that you found a clay silt membrane if you will that is holding the water perched, but you don't know how thick that is in the center.

George Logan: Or where it is.

Chairman Block: Or if it is there in the center.

George Logan: Right, because typically what happens and Mr. Slayback alluded to that, this is a (inaudible) environment which means in post glacial times this was a pond and the fact that we have sands down low means that early on there was enough flow from the environment to bring the courser materials to the center of this thing because we have the sands underneath, and then as it became a more slower environment as far as intervening flows, then it became a depositional environment for the swamps for the materials in the silts which created this layer of clay. As I look through the structure of the silt, clay, loam it is very apparent that it is stratified which means that there are very minute areas of sand that we can see, so it was laid down. Typically what happens is when the depositional environments

happen is that the, and I think it was alluded to a little earlier is that the, and I think I saw it in the report, is that these clays are more or less in the same level, so if you dig here and you find it, and you dig down there, you will find them at the same elevational level with respect to the surface. So this would be a little lower. We didn't find that, so that means that going from the sides this clay layer comes this way and then it disappears, so I don't know where it is. Is it going here, does it even exist down there in the middle? That's the question that I need to resolve.

Chairman Block: So in other words, does it form a bowl or is it a hole?

George Logan: Correct. Is there a hole in the middle, and if there is a hole in the middle, and the materials in the middle are more sandy, that means there's more of an influence of the sand layer that we found going all the way to the edges so there is more, potentially more ground water. At the end of the day it might not make a lot of difference because really what is important is that we understand the hydrology, if the hydrology is going to be maintained and to that, I'm going to be looking forward to seeing the information from Mr. Gradwell regarding that.

Commissioner Paskewich: I have a question. With all the study that has been collaborated between the parties, including you, have we come to a conclusion at this point that that is a vernal pool?

George Logan: Oh, yes, absolutely. There's no doubt about that.

Chairman Block: Mr. Logan, if you are saying that a large, the question is how much water that is found in the wetlands pool, is transported through these fanned layers rather than being just runoff then is the question of how these sand layers will be interrupted by the trenching and changes in grading even more important.

George Logan: It becomes more of an open question at that point yes, because we need to figure out and this is something obviously that we are going to be paying close attention to, the blasting experts, and their opinions because I want to be sure we don't have an interruption, whatever flow is coming through the ground water towards this wetland, but I think we're not there yet.
Under thirteen of the Dru Associates report of November, we have, they have provided some calculations for the Shuler simple method and I guess what I'm asking here as I look through this, the intent, and my question was to be able to see what is generated under proposed conditions as far as what is the watershed under existing conditions first. What is it export as far as the different constituents that we talked about the nutrients, the metals, the sediments, and then what happens under the proposed conditions and then what do our storm water management best management practices, what is (inaudible) So appendix three, I have a little simple table here, which shows the predevelopment parameters and the post development parameters and I have two questions here for the applicant. Number one, is the post development table here, for instance I see that nitrogen under the predevelopment conditions, the export from the watershed, assume is to this wetland that we are talking about is 36.9 pounds per year, under the post development it's 288.7 pounds per year and the question is, does that take into account attenuation of the best management practices, or does this create attenuation? If there is additional attenuation it takes another, makes it smaller could they come up with how they, what that number is. I don't see any supporting calculations or assumptions here, it is just a table. I'd like to be able to see the mathematical process if you will and an explanation as to what these number, post development mean exactly. My hope is that those number that they will be generating will be what's coming out of the storm water management basin, so the basins would have some affects, I'm not sure

what these numbers are. The numbers that are going into the basins or the numbers that are coming out of the basins.

Commissioner Paskewich: I have some questions about that chart also. I'm curious about zinc and lead content. What would be the origin of that? And I see it decreasing in the post development.

George Logan: And that's why I think it is post detention basins. Zinc and lead is common in our natural environment, so these are common but what happens in terms of development is that you have additional zinc additional lead as part of your development, cars bring it, tires retain……

Commissioner Paskewich: Roof drains, shingles.

George Logan: And I would also look at copper….

Commissioner Sadil: What is COD and BOD?

George Logan: Clinical Oxygen Demand and Biological Oxygen Demand, these are more chemical and biological processes that tell us what is happening in the environment because of development and how it is affecting, but now furthermore as I am going through, I will have Sigrun comment a little bit on the cottonwoods. We do have and I apologize, I didn't submit this to the applicant, I'll give it to them at the break, we did collect samples, obviously it's only now and we really haven't analyzed it to tell you what is going on, but we did coral a bunch of parameters so we will give that to the applicant tonight and I see that we both have submitted our records to the NEED regarding the swamp cottonwood.

Chairman Block: Mr Logan, rather than go through all he issues which you need to communicate further in order to resolve, I'd like to jump to the end or what I think might be the end of it, particularly as to the swamp cottonwoods. Yes, we now know it's a protected species, what is the burden that is imposed upon the applicant and the town because it is a protected species?

George Logan: I will have Sigrun comment on that. Obviously this is a wetland environment so that is important. If it was an upland species that would be a different scenario, still important but not perhaps something that you would regulate. Because it is a hygrophyte and it creates habitat within the wetland it's very much within the purview of this Commission.

Chairman Block: So we'll hopefully get a concluding report at the next hearing.

George Logan: Yes you will.

Chairman Block: Thank you.

George Logan: Sigrun will just give you a couple of things on that.

Sigrun Gadwa: What we are planning to do is communication with NEED section of DEP which is going to be very important in getting their input and if you just continued on and made your decision without talking to them, that would not, and if something happened, you know that wouldn't be right. I did want to point out that the largest threat to the cottonwood is increase in shade levels. It's a very, right now nothing else around it, no tall trees, shading it, it's next to the aquatic shrub, button bush and only on the far edges of the wetland are there pin oaks and maples and other types of wetland trees. If the wetland gets a little dryer such

that it can support other typical New England wetland trees, the cottonwoods will be shaded and it will not do well. So that, you know, I have done research and also I have wondered about the (inaudible) and another sister population into Massachusetts is another big vernal pool that has runoff from trap rock ridge. I'm very much sure it is the same situation as this so we want to make sure that the high levels of minerals that are typical in a trap rock runoff like magnesium, manganese, calcium continue to be in the water in this, in this vernal pool. I have to say there are any of number of plants on Cedar Mountain forest….

Commissioner Paskewich: Would you say that those trees are acting as a sponge affect now where they are now to prevent those minerals from going into it? In other words, if they were in place and they stayed in place, would they be working as a sponge affect to keep…..

Sigrun Gadwa: The minerals are good and they are using the minerals, they are growing well because of the minerals and there are other plants, other aquatic plants, the swamp buttercup there that are also using the minerals and there are many upland species or just moist soil wildflowers in the trap rock ecosystem that are also able to compete and thrive because of the trap rock minerals and there are plenty of them on the plateau to the east where the development is proposed and their may be other species. Because they are not wetland species we question whether it is appropriate for us to bring them up, but I think your Zoning Commission should probably have called for a full botanical survey of the area to be blasted and where the buildings are going to be because there are critical contacts in the NEED, critical items on the list on the Connecticut Eco website.

Commissioner Paskewich: So the number of trees that you saw, in the ratio of the area of the vernal pool, are they detrimental to it's habitat being retained or is there not enough of them?

Chairman Block: Are you talking about the pin oaks and….

Sigrun Gadwa: There are very few pin oaks and other drier within the interior of the wetland, there are lots of swamp cottonwoods. If the number of pin oaks and red maples increases that will cause the cottonwood population to dwindle.

Commissioner Zelek: I just want to get right to the point. Is there, in your opinion, any activity outside of the hundred foot buffer that is going to impact this species?

Sigrun Gadwa: Well, I think it's, the question is identical to the question regarding, is there any activity that will impact the productivity of the vernal pool. If there is less ground water discharging and the surface water runoff discharging into this pool so that the hydrology has changed, it will be impacted and also if the chemistry of the water is significantly altered from storm water washing off streets and houses rather than ground water seeping through rock, soil, the population will also be adversely affected.

George Logan: Just to make sure that, we have not come to, we are just giving you a hypothesis. We have not yet looked at all the data that the applicant has provided or is about to provide for us to come to a final conclusion or recommendation on really anything. So that is something that is going to be happening in the next few weeks, three weeks, until the next meeting.

Sigrun Gadwa: I was just saying, if the hydrology is altered, and if the water chemistry…..

George Logan: And that is a correct statement.

Chairman Block: But again, the question that I had raised originally was, by virtue of this being a protected species what are the burdens that are placed on both the town and the applicant by the fact that it is a protected species?

Sigrun Gadwa: Well, it's a significant adverse impact to harm a threatened or endangered species, no question about it.

Chairman Block: So we have an obligation to maintain them, if not allow them to thrive.

George Logan: We need to make sure that the population not only is maintained but actually thrive so there is actually a future for them so if there are any changes that long term might have a detrimental impact on this feature of the wetland then that's an impact, a direct impact on the habitat, a physical impact.

Chairman Block: Now again, I know you haven't had a chance to review it, but the applicant's submission tonight indicated that the population there was disproportionably mature or aged specimens as against a lack of young specimens.

Sigrun Gadwa: I saw many young saplings that were two or three inches. Just like silver maples on a flood plain, swamp cottonwood seedling do not get established by any means every year. They need to have a very dry spring to succeed and then a moist summer to flourish so like the silver maples in the Connecticut River flood plain you may have fifteen years apart, the cohort, and they are definitely cohorts of these swamp cottonwoods and that is the way that they operate.

Chairman Block: At this season of the year, would it be possible for you and the applicant team to come to a consensus as to whether or not this is a young, a thriving, a mature population because I just want to make sure what we are starting off with.

Sigrun Gadwa: I'd like to, I'd love any chance to get out there again.

Commissioner Clark: May we get a copy of your submission to the rare plant survey form?

Sigrun Gadwa: I actually already sent it to you.

Commissioner Clark: Thank you.

Commissioner Zelek: With a species like this, endangered, is there any liability or penalty for damaging it?

George Logan: Well, that's a good question. They are protected by a public act, and so I can tell you that there would probably be some penalties involved if it was intention. If I went out there tomorrow with a chain saw and started taking cottonwood down, I probably would end up with some…..

Sigrun Gadwa: Well, basically if you allow it to be damaged, you are not acting consistent with your own wetlands regulations, and if that happens repeatedly then the DEP can take action.

Commissioner Paskewich: If you know, how far away is the closest tree from any development that is being proposed?

George Logan: You mean of these trees, these species?

Sigrun Gadwa: About 120 feet.

Commissioner Paskewich: Okay, and there are practices in place for storm water management not to move towards those areas?

George Logan: That is still something that we are carefully reviewing.

Sigrun Gadwa: The question is, will the discharge from the storm water basins be the same as the water that is there now in terms of the mineral profile.

Commissioner Paskewich: So who would come to that conclusion?

George Logan: Well, that is something that we are in the process of reviewing based on what we received today and the fact that this is sort of a new concern that has happened since the last meeting, so we will make sure that if we have questions that we don't put them in our back pocket and then ambush the applicant. We will tell them early on what these questions will be.

Sigrun Gadwa: Now should I consult with the DEP on these matters, do you think that would be appropriate?

George Logan: Or is the CERT going to accomplish that?

Chairman Block: I think that is something for you to resolve and discuss with them, just so we have as much pertinent information as possible.

Sigrun Gadwa: Okay, so I should just ask the CERT what…..

George Logan: No, I think what we are hearing from the Commission is that we are going to go forward and get as much information as we need and whoever the experts are in the state and if the DEP is the curator if you will, then we will go directly to them and I would advise the applicant to do the same.

Chairman Block: Any further questions from the Commission? Attorney Regan?

Attorney Regan: I do have a point on this. If we are going to get anything from DEP I'd like to have it directly from DEP in writing as opposed through Sigrun or through my consultant. I'd rather have it direct from them, first source. As opposed to interpreted, as opposed to up to interpretation.

George Logan: I believe what will happen is that we will have an initial conversation and of course your experts can too, but because this is a very critical concern to all parties, both sides, what we will ask of DEP is that they put concerns or give us any information on the record, but my guess is when I looked at the list of what the revised DRT will be that in there, I think there was an endangered species concern, so we'll probably get something from them also.

Chairman Block: Raise your issues with the DEP, you raise your concerns, exchange copies of those letters so both of you know what each is asking and you will get your responses back and you can continue to communicate.

Sigrun Gadwa: I also think if I write up a summary of findings based on large part with conversations with the DEP, I'm going to give them a copy so that they can see what I'm saying they're saying.

Chairman Block: Forgive me, but I don't think it's appropriate for this hearing, at this time but I don't think there is much value in anyone relating hearsay to each other. Give them copies if you will, they will give you copies and you'll have the direct information and you can both agree to disagree with what you tell us.

George Logan: I think Attorney Regan's point is well taken.

Commissioner Clark: I have a question. When this rare plant survey form is submitted to DEP doesn't that trigger interest from DEP? Isn't that the point of it?

Chairman Block: The issue is, what is their response to having been notified? Whether they want to tell us, whether they want to tell the applicant, and when are they going to do it, if they are.

Sigrun Gadwa: I actually went to a quarterly Botanical meeting just the Saturday after the last meeting…..

Chairman Block: Excuse me again…..

Sigrun Gadwa: I was asked……

Attorney Boorman: Excuse me, you go through the Chair person please.

Chairman Block: That type of information I don't think is germane to our deliberations at this point. I think anyone who is interested can call DEP and ask and find it because we will be very interested in what DEP does respond to both your concerns and to the applicant's concerns. We will deal with it then, and we thank you.

Commissioner Zelek: I just wanted to mention that I did get a note from a member of the public saying that we may run out of time for the citizens to talk, so I just wanted to make sure that you were aware of that, but I didn't want to bring it up while the experts were discussing.

Chairman Block: That's exactly where we are going now, in fact before we start, I just want to ask Chris again to tell us about our time table so that the public and the applicant will be aware of when our next session will be and where we are going from there.

Chris Greenlaw: Thank you Mr. Chair. The next session will be determined by the Commission pending when you think from the consultants, from our experts when you think an adequate amount of time would be necessary to plan another special meeting for the public hearing, and you can consider that and make a motion to discuss that at the end of the meeting.
Currently at this time, correspondence that I received, I did received at the last meeting, you had requested to grant an extension, you had requested that of the applicant, they agreed, and subsequently their attorney sent that to me in writing and that was for the full maximum 65 day extension allowed by statute, and if I'm calculating those days correctly, perhaps Mr. Regan will want to confirm for everyone what that date would be, working within the sessions of the public hearing that we have here.

Attorney Regan: Based on the only usage that I know for the date calculation function and plugging it in today, January 24th was the date that I came up with for the maximum, 35 plus 65 equals one hundred.

Chris Greenlaw: I concur with that.

Chairman Block: Attorney Boorman, if you wish…..

Attorney Boorman: Yes, if I may, that request is the for maximum extension if we need to go to the maximum extension, if we don't need to go to the maximum extension, then we don't need to go that far and we also talked about extensions that are potential for the decision making situation because we have a cap on that too. So, quite frankly, the sooner we finish the public hearing, the better it is for purpose of having additional time for decision making if you need it. But we certainly don't want to short change the public either, so we want to make sure that we do complete, and so my point as I indicated to the blasting people, as well as the engineer, I would say the same thing for the last experts that spoke up, we would hope that whatever date we set now comports to a date that they will be able to appropriately finish their consultations with the next hearing, one would hope and then report accordingly because we do have to keep in mind this time table because we can't run out of the time table without having all of the information that we need from the experts. So I'm trying to put their feet to the fire to make sure that the town experts as well as the applicant experts don't wait until the day of the hearing to have their telephone conversations. Do it before that, if you have to talk the day of the hearing, that's fine but have pretty much have things wrapped up please before the day of the hearing so we have productive information coming at the next hearing in terms of those questions that, and I understand that there were circumstances but hopefully we won't have similar circumstances the next time.

Attorney Regan: Attorney Boorman is correct, I grant 65 days, you don't have to take it. I just always grant the maximum at the Commission's request but you can use as much of that or as little as you want, and he is also correct that anything you don't use in that 65 days can be added on to the decision making period, because you are only allowed 65 days in extension in total for all of the periods.

Chairman Block: And again, to reiterate back to all of our experts, all the applicants and the public, be succinct, be prompt, and let's get this wrapped up thoroughly but as promptly as we possibly can.

Commissioner Igielski: Would you repeat that date in January?

Chairman Block: The applicant has acknowledged the 24th of January as being the end of the time allotted for public hearings, the outside date. And I would like to, if the public will forgive me, allow the Town of Wethersfield to give us their comments at this time.

Mark Branse: Thank you for that courtesy, Mr. Chairman, Mark Branse, representing the Town of Wethersfield and I'm joined by Mark Turner who is the Director of Public Works and Town Engineer. At the last meeting I was very brief, I'll be even briefer tonight. The major concern for the Town of Wethersfield is that long term maintenance and detention ponds in the central protecting wetlands and water courses that are down graded in Wethersfield. The original application in the opinion of Mr. Turner did not provide that long term maintenance that would protect the wetlands and water courses. I've been in discussions with Attorney Regan, he and I discussed what we felt were some protections that would assure that, and yesterday I did receive draft documents for the condominium association that are in accordance with the discussions that he and I had. The structure is good, it's a workable

structure, a viable structure. Mike Turner and Peter Gillespie, the Planner in Wethersfield are reviewing those. I think we are going to have some tweaks but I don't think anything that Toll Brothers will have any difficulty with. So I'm very encouraged with the progress that we are making. I understand that the hearing will be kept open, and that's good since we just got these documents we will need a little bit of time to do work with them. I think at this point we're very pleased with the response.

Chairman Block: And I presume that when your issues are resolved that we'll get a letter confirming that you are satisfied?

Attorney Branse: Yes.

Chairman Block: Thank you.

Chris Greenlaw: Mr. Chair, we would also like a copy of those documents for our records, for review.

Attorney Branse: For review, the draft, the draft ones, is that…..

Chris Greenlaw: That's fine.

Attorney Branse: The only other thing I would ask, we are an intervening party here, the applicant has been very good about providing us copies just whatever you receive, we would love to see copies of. Thank you very much.

Chairman Block: We'll adjourn for five minutes and then the public can be heard. The meeting was adjourned at 9:15 p.m.

Chairman Block reconvened the hearing at 9:30 p.m.

Chairman Block: Sorry we took a little more than five minutes. Has the public started its sign up sheet. I forgot to mention that in the beginning. Again, I would just ask that the comments be really be kept on point, as we are doing very nicely in time, but we would still like to home…

Holly Harlow, 11 Edmund St.: I brought a bunch of stuff to hand out. I have been in contact with Dr. Elizabeth Harper, Assistant Professor of Natural Resources Ecology at Paul Smith College and co-author of Demographic Consequences of Terrestrial Habitat loss for pool breeding amphibians, which is a reference source in (inaudible) 2011 Herpetological Assessments. The Connecticut environmental review team rebutted Dru's use of the reference section of a Harper et al paper to explain how much habitat is required for the amphibian population in the Cedar Mountain wetlands. Despite the critique, Dru repeated the reference, word for word, in the same context in the 2012 mitigation plan. I asked Dr. Harper about this discussion between CERT and Dru. Her answer to me was by e-mail and it is quote, The Dru Associates Inc. use of our data is not appropriate. The summary by the Connecticut Environment Review Team is accurate. Did Dru not understand the Harper et al data or was the date intentionally manipulated to mislead us and the Commission? In the August 29, 2012 letter to the Commission Dru Associates makes this assessment, quote, the short hydrological cycle observed in basins two and three shows that they are not reliable to support a pond breeding species. In her e-mail to me, Dr. Harper describes how wood frog and spotted salamanders respond to habitat loss. Each copes with what is called catastrophe years, salamanders stay in the uplands and return to breeding when conditions improve, wood frogs from neighboring populations will recolonize habitats with a population

has suffered loss, as long as they can get to them, meaning the other wetlands. Her answers to me do not imply that habitat in a catastrophe year is not dependable. When the animals have what they need, they will survive and thrive, again, is Dru uneducated or is this an attempt to mislead us. Dru's mitigation plan states, quote, considering the immense amount of woodlands to be preserved along the whole western half of the site, to the ridge line, there is more than sufficient habitat for the persistence of this population regardless of the final population density. In Dr. Harper's words, quote, it can be challenging to figure out which part of the upland habitat is necessary and which part is not being used. If you monitor a population for a breeding season, for a few breeding seasons, you can figure it out, but otherwise, it is difficult to predict. Once more, is this a lack of knowledge about how the populations work, or just an attempt to mislead?
I've also been in contact with Dr. David Patrick, Assistant Professor of Fisheries and Wild Life Science, School of Nature Resources at Paul Smith College and Dr. Harper's husband. The sparse information regarding the amphibian tunnels offered by Dru Associates is alarming. I obtained a paper co-authored by Dr. Patrick about amphibian tunnels which I will submit for the record, and it reveals a need for attention beyond anything that Dru has described for us. It would be an understatement for me to say that I'm profoundly concerned. The applicant has allegedly repeatedly violated their permits and the clean water act. We've been offered no references or images of project in identical landscape which would serve to assure us that the fragile and valuable wetland habitat will be left as it was found, thriving and productive after having roads, basins and utility trenches blasted out of nearby rock. The hydrogeology survey done on this site omits an assessment of wetland number three and is therefore incomplete. The environmental consultant appears to cherry pick, omit, and manipulate scientific data, one can only suspect, to render the result most advantageous to the applicant's position. He's offered no references or descriptions of past projects that would assure us as to his claim of expertise, he has given us no evidence that he has performed the necessary due diligence related to the amphibian tunnel. I want to make one comment about the tunnel as well, I think in at least one end of the tunnel, the property would be private property so a citizen like myself who might be interested in taking a person interest in making sure the tunnel is cleared and unobstructed, I wouldn't be able to access that. I'm not sure about wetland two, if that is on, would be town owed property or private property but I would have that same concern. In closing, I'm convinced that this development will cause significant impact to this wetland habitat. I have the e-mail correspondences between myself and Dr. Harper, and all the goodies here.

Chairman Block: That's what I was going to ask, if you included the e-mails.

Holly Harlow: There's a little package here.

Gail Bedreko, 21 Isabelle Terr. : An immediate impact of any development is removal of natural habitat with the substitution of houses. Affects of this substitution are degradation of nearby wetlands, and fragmentation of ecosystems by roads, houses and other disturbances to the land. The primary affect of this type of land disturbance is elimination of populations from the land that has been destroyed and habitat fragmentation. That occurs when remaining population are isolate because the links between the habitat patches are eliminated. Even when a wetland area is not directly in the path of construction activities ultimately impact wetlands in the vicinity of the development. Soil disturbance from home and road construction impacts the soil and makes it more susceptible to erosion. This is more severe in areas where construction is on steeper slopes and soils are more easily erodible, thus Cedar Mountain. Use of fertilizers and pesticides, road salt and pet waste and other substances and chemicals near wetlands can cause utrafication and oxygen depletion. Such changes have been shown to alter ecosystems in wetlands and also have been know to pave the way for invasive species that can rapidly adapt to new conditions. Roads adjacent

to wetlands impact amphibian and wild life population through direct mortality and reduce habitat access. This would impact those critters not within walking distance of the amphibian tunnel. Indirect impacts to wetlands outside of the area of development original in changes in the hydrologic systems. Changes aggregate and such changes that intercept rainfall is removed, soil is compacted, impervious surfaces are created and drainage systems are installed. This creates hydrologic stresses which can result in ponding, increased water level fluctuation and disruption to water flow. Land (inaudible) precipitation is lost if the land is converted to roads, driveways and houses. This changes the rate and volume of runoff and alters natural drainage features. This in turn, alters nearby wetlands. In a relatively small area such as Cedar Mountain the negative impacts of development on the wetlands will be magnified. This development might bring short term economic benefits, however it places the ecosystem in jeopardy. In addition, as has been previously suggested, long term maintenance of the detention ponds, amphibian tunnel and other artificial devices will likely default to the town, at a much greater cost, as well as any additional liabilities as a result of blasting damages to existing structures. We know what we have now, a valuable natural resource in the midst of urban sprawl, please don't be swayed by biased research and questionable promises given to approve this project. Thank you.

Roy Zartarian, 25 Stuart St.: Good evening, I want to talk about two items. First, wild life, quite rightly and justifiably you are concerned with the impact of the proposed Cedar Mountain development on wild life that depends on the site's wetlands. Continued integrity of the wetland area and the surrounding woodland are both vital to preserving the amphibian and other species that exist there. I would ask that you consider the impact on bird life as well. Birds also benefit from the wetlands and it's just not the birds you would think of as associated with swamps, like ducks or waders, but birds who's normal habitat is upland forest. To put things in perspective for you, I've prepared a compellation of my sighting data, these are personal observations going back to before 2007 of the birds seen on Cedar Mountain. The latest count is 112 different species of birds over the period. Granted, a small number of those species were one time only sightings, like bald eagle or common loon, but the majority on the other hand are evenly almost evenly divided between those who nest on the mountain and those who use the mountain as a migratory rest stop. The loss or fragmentation of nesting stop over habitat due to man made activities, such as a development, is a major factor in declining bird species population. Any development on the mountain would unfortunately contribute to this loss. I have as I said compiled my sightings, and both tabular and graphical data showing what species were seen and in what years to give you an idea of the quantity and the variety on the mountain.
The second item I want to talk about is precipitation. Unfortunately I was not able to be present for Dr. Abrams remarks earlier in the hearing however I am referring to his comments from the November 13th public hearing when he was responding to concerns that his field research on amphibians on the mountain was not valid because of the dry conditions experienced during 2012. He stated at that hearing that he provided and I'm quoting from the minutes, eleven years of rainfall data in the immediate vicinity and it shows that the years that we worked were just like the whole eleven period, very difficult, not unusual. As of yesterday, the numbers that were provided by Dr. Abrams had not been made available to the public. So we really have no way of looking at that information. I took a look on my own at precipitation data for the central Connecticut region as provided by the National Climatic Data Center of the National Oceanic and Atmospheric Administration and I've assembled it in both graphical and tabular format and it's a submission that I will leave with you. The precipitation levels shown include both liquid precipitation that is rain, and liquid equivalent of snow. I'm not making that up, I received an e-mail from one of the people at NCEC telling me specifically that this is how they measure snowfall, so liquid equivalent. The charts that you will be getting will show precipitation for the period from September to August for the years 1998 to 2012 and monthly precipitation for the first ten months of the calendar years, 2011 to

2012. The September to August period was selected because vernal pools do not follow the Julian calendar, whatever one we are on. They follow a cycle of drying and replenishment, generally September or October through August or the following September. Just arbitrarily I chose a September to August period to reflect a hydrological cycle of the vernal pool. Let me just show you briefly the way the hydrological trend works. Granted 2010, 2011 was skewed a little bit by Hurricane Irene. As you can see the point or the current year ending August 2012 we are seeing a point below the trend of previous years with one exception. Comparing months, particularly the period January through June of the two years, 2011, 2012 where 2011 is the blue line, 2012 the red line. Again over the period vital to replenishing a vernal pool with rainfall and snow melt we again see 2012 falling far below 2011. Copies of these are in the submission that I will be leaving. With that, and before I'm declared to be all wet, I thank you.

John Bachand,: You were doing spelling corrections before, I don't know if you are still doing that, but a couple of things on page 6, is that important to you at all?

Chairman Block: For what?

John Bachand: You were doing spelling corrections at the beginning of the meeting….

Chairman Block: Just give us your comments, we passed the minutes.

John Bachand: This letter that I'm distributing to you, it's revisiting the federal wetland jurisdiction question again, I know that it has kind of been hashed over but at the last meeting I think there was some misrepresentations made and this explains it pretty clearly and I think, I mean, it is a very confusing and complicated issue, very interesting for the people who are involved with that, but anyway, the reason that that determination or that jurisdictional question is important is because of what some of you mentioned before about who is responsible for what if a tree dies or this or that, so I think that does kind of you know, show why that is important. I'd like to mention one thing, that's why I drew that little profile picture on the board over there, you can discuss, anything we look at is always in plan form, you are always just looking at it in that one dimension, looking at the picture of it, and I think it's important to, I think it would help to understand all this if you understood the profile of that site. It's very complex and very extreme. There is probably an eighty to ninety foot difference between the high points and the low points there. Thirty feet approximately just from basin two to the eastern plateau there where the subdivision will be built, so that should be considered and I think that a lot of people can't appreciate that just looking at the drawings as they are.
Also another thing to keep in mind about that jurisdictional question is the federal clean water act does not discriminate between intentional or accidental discharges. So that accountability question, who is going be accountable if potentially one of those storm basins had a blow out. The gentleman from Rema is it, mentioned the breakout and when I talked with a DEP official they referred to it as a blow out which sounds much worse of course, but it is a potential, could potentially dump quite a bit of fill and debris and sediment and erosion into the wetland and I think that is a serious consideration to take. I also agree with Rema about the soil consistencies in that wetlands, I look at it and I didn't see a definite clay material, I saw the sandy loam, it is, I would call it semi-pervious, not very well drained and for someone in the drainage business like me, you wouldn't want to see that in your work area, you would have trouble dealing with that, if you had to drain it, so I refer to that as semi-pervious. An important thing to mention and to counter with, Dr. Abrams mentioned is the overflow he mentioned is active in a hundred year event, that overflow, I'm one hundred percent certain of this is active on an annual basis. It's approximately twelve inches higher than the floor of the basin. I actually did a laser level measurement there. It has signs of scouring and erosion. I

don't believe it was man made, you mentioned maybe it was man made, I was concerned that maybe it was man made, but I don't think it was. There is no evidence of that. The bank there or the berm in actually very unstable. It is not solid rock. It's actually loose fill and I wish that some of you, if you were able could go up there and just observe. Very simple to look at, you'll see it has signs of sediment in that little runoff channel now, that overflow channel. So that is the primary overflow. So, like I said, I believe that is used annually, on an annual basis. When that basin two fills up with water approximately ten inches higher than what is in there now, so if that is the primary overflow and I believe that happens annually, not this year probably, because we had very little snow melt and very low on the rain, but it's very obvious that that is used annually and it does form a channel directly to what is referred to as basin number one, and that is the next thing that I want to discuss. Basin number one I don't know why you are calling it a basin, it's basically a stream. It's a never ending flowing stream. At least three people here from the audience who go there on a regular basis agree with me that they have never seen that dry. That flows all of the time and that's in the little channel there, so I don't know why it's referred to as a basin, it's a tributary to first Mill Brook and then Piper Brook, so I would call it Cedar Brook. It's a constantly flowing stream. Also, that is the nexus, if you will that refers to a nexus that the Army Corps uses as part of their criteria to determine jurisdiction. A nexus is a connection, but it's not a physical connection and you can read more about that, it becomes very interesting about the substantial nexus and all that. Government uses a lot of ambiguous terms unfortunately, but that's the way that it is.

The next question I have is on the blasting. If you look at that picture there, basin two, the little plateau is directly to the east of the plateau. There is rock outcrop hanging over the plateau, I'm not sure exactly, but that is the closest basins will be fairly close to that rock outcrop itself. When you look at it in a plan, you say, okay, it's a hundred and so many feet, hundred and fifty feet, hundred and twenty feet the first foundation from the wetland, but if you look at it in profile, you can see it's much closer to that rock outcrop and I believe that rock outcropping could be unstable and it could, blasting could cause trouble there. I'm just curious as to what will happen when a rock is dislodged and falls down into the wetland area. Who is going to be responsible for that? There is already evidence of loose rocks, there is already evidence of over the years rocks have fallen off of that and have fallen down there so I'd like that to be considered also.

The other question was the affects of blasting on draining the wetlands. Your hydro geologist mentioned that thirty foot open fissure limit approximately, said it could go down as much as thirty feet, but if you just come over here, that thirty feet is ideal. This is approximately twenty-five to thirty feet, the plateau above here, thirty feet is ideal for allowing this water, even though it's on the back side of this ridge here, if it can go through to feed this wetland this way, but also thirty feet is ideal to allow water to travel underneath the berm even when it is below the overflow. So, thirty feet, you only need ten feet for either of these to function. This is where the river, the stream is. I just did some quick calculations, I was just curious about that blasting, sixteen thousand cubic yards, it was just mentioned yards, but that is cubic yards of course, that's 432 thousand cubic feet, that's 61 full basements, the volume of 61 full basements if you had a 2,000 square foot two story house with a 1,000 square foot basement seven feet high. It's also, just to give you another example, it's a hundred by hundred foot hole, I mean a hundred by hundred foot area forty-three feet deep. That's a lot of volume, so I just thought that was interesting. So just to end this, I'm trying to deal with these things that I think are more technical or more physical, but the three people who spoke before me had excellent anecdotal environmental concerns. It's hard to quantify or qualify those, but I think that the evidence of negative impacts is just overwhelming.

Commissioner Zelek: Not a question, just a comment, so based on what I just heard from the public regarding that outcharge area, it contradicts what we heard from Dru Associates, again

I would like to say that I want Rema to take a look at that and give us their opinion of what that outcharge area is and whether or not it is an intermittent water course.

Chairman Block: And a (inaudible) channel as well.

Commissioner Zelek: Yes.

Chairman Block: I believe by the way that in our files we have a photograph of that area already don't we Chris? The outfall from the pond, the wetlands area.

Chris Greenlaw: We can get you a photo, Mr. Chair.

Chairman Block: I thought we had it, I thought I remembered seeing it somewhere.

John Bachand: I submitted it to you in the last letter, so it's not a very good quality picture.

Chairman Block: We'll check the file, if not, we'll get a better one.

Gary Bolles, 28 Burden Lane: At your meeting on 13 of November, 2012 a representative stated that there was no Army Corps of Engineering jurisdiction re the wetlands on Cedar Mountain. He cited the ruling in 2006 that eliminated jurisdiction on all wetlands inland and that do not have a demonstratable nexus of connection to navigable waters. The claim that basins two and three on the site do not connect to navigable waters is misleading and could be incorrect. I need to point out that due east of Cedar Mountain we have Wethersfield Cove that lead directly into our navigable Connecticut River. Just because there may not be a requirement for a federal wetland permit because no work is planned within one hundred feet of the wetland boundary does not mean that there is no Army Corps jurisdiction over that wetland. The Raponis supreme court decision does not shut out the mountains wetlands from being exempt from the Army Corps jurisdiction. Also, under the Army Corps of Engineers and the Environmental Protection Agency joint memorandum addressing field guidance on the Raponis ruling the wetland isolated as it is, will continue to be within the federal clean water act jurisdiction or subject to the substantial nexus standard analysis to determine jurisdiction. I have copies of that memorandum, along with my comments to give you. It is my conclusion that the mountains wetland is not exempt from compliance with the clean water act standards now or in the future. An extremely important question is, if the retention basins were to spew toxin's debris material into the wetland, who would be held liable for violating the federal clean water act? Would it be the developer, the home owners, or the Town of Newington. We have very intelligent people on this Commission, you ladies and gentlemen need to give these facts and questions your very careful consideration in your decisional process. Thank you.

Allison Clark, 25 Wilbur Drive: Good evening. Going back in time a little bit, first starting out with some comments made at the August 16, 2011 Conservation Commission meeting, Chairman Block asked Dr. Abrams if blasting for basements occurred at depth of eighteen feet, what would the impact be to the wetlands. Dr Abrams responded nothing should happen because the blasting activity would occur at a considerably higher elevation. Commissioner Block said, how much higher, Dr. Abrams said, thirty feet. According to the surveys at the town hall, in the engineers office, the special wetland elevation is at 298.6 feet at the center and 300 feet at the edges. Eleven lots abut that one hundred foot buffer, two of the northerly lots are at a 315 foot grade, if you blast eighteen feet down, that puts the blasting below the level of the central wetlands. The lots to the east are at grades between 320 and 330, if you go down eighteen feet there, that puts you at two feet to twelve feet above the wetlands. The applicant also said that blasting for house foundations would take

one to two days each, that's eleven to twenty-two days of blasting, at elevations equal to or up to twelve feet above the central wetlands, not thirty feet. The vernal pool sits at 305.7 feet. Two lots to the north sit at 315 to 320. Again, going down eighteen puts you below the vernal pool, will blasting be required there? There are roadways, water, sewer lines to the west and the south of the vernal pool, just on the 100 foot buffer edge. How will the road way and trench blasting, how long will it take, next to the vernal pool, and how deep will the blasting be? I think it's important for somebody to address that question.
On October 16, 2012 the blasting expert, Dr. Slayback was asked if blasting was asked if blasting would have any impact on the vernal pool. He responded that he was not charged with looking at that wetland, he suggested that Dr. Abrams answer that question. Dr. Abrams responded, I'm a wetlands expert not a certified geologist. Do we have somebody who can answer that question please? Will the blasting for basements, roadways, or utility trenches impact the vernal pool. Everyone keeps talking about the wetlands and I think that is just as important. The applicant also stated that there will be no impact from blasting to the central wetland because blasting will be 125 feet away. I'd like to enter into the minutes, and I have a bunch of things here, Town Council Special Meeting minutes from March 1, 2004, again, dating myself, but the Town Council discussed the Nott Street project blasting permit. At the bottom of page 3, Gary Santoro, the Fire Marshal at the time notes that he was very sympathetic to the affects of blasting because he, his previous residence was damaged by blasting at Balf Quarry. More to the point he states, considerable damage occurred with the blasting at Colonel Chester Street. That's right off Nott Street, where the rock was very thick and the blasting caused vibrations in all directions. He said blasting from Col Chester Estates project caused damage beyond three hundred feet. He notes too that pre-blast surveys and recommendations by state statute require the surveys within a three hundred foot radius. Could there be a common thread here? I would like the applicant and the experts hired by the town to weigh in on seismic activity, deep rock blasting and whether or not it will disrupt resident amphibians in their cycles. (inaudible) emitted from blasting be detrimental to the amphibians, salamanders in particular, due to their sensitive skin. Are there any prudent or feasible alternatives to blasting?
Next, on the amphibian tunnel I am a bit confused on this issue. In the October 16, 2012 meeting minutes Ray Gradwell of BL Industries said the amphibian tunnel is a sixty inch pipe. The plans that I see down in the engineer's office call it a twenty-four inch low profile H2O open-ended concrete galley wrapped in separation filter fabric with a rebar cover having four inch maximum openings. I heard at some point it was changed from a circular to a rectangular tunnel, but from sixty inches to twenty-four inches is a major difference. Holly Harlow was, we had a little bit of confusion, she was going to provide an excerpt from the Wild Life Crossing Structure's handbook, I thought she was going to provide it, I would like to bring that in tomorrow if I may. I did provide just a couple pages, picture of the cover and two pages on the inside that refer to construction recommendations for amphibian tunnels. I encourage the Commission to peruse the handbook, and I will provide a link to that on line. Dr. Patrick who is the expert on the amphibian tunnel she talked with said that he was warning her about long tunnels in his e-mail. The manual recommends a maximum tunnel distance of 150 feet unless there are guiding wall or funnel shaped fences to guide the animals into the tunnel. The proposed tunnel is 193 feet on Cedar Mountain. I did not see any funnel or guiding wall details on the plan. Dr. Patrick recommended a minimum diameter of 19.7 feet, in the papers that he wrote, I think she gave that to you. The Newington Walk plans say again it's 24 inches but the grate cover appears to be only 16 inches wide by 12 inches high, and it has these little four inch rebar grates though that may be good for child protection purposes, it's not ideal for amphibian use. I have attached the amphibian tunnel construction guidelines and in that it states, tunnels should be completely level without slope of any kind at the entrances or in the tunnel. According to the Newington Walk plan the elevation at the vernal pool is 319 feet, the elevation at the central wetland is 311 feet. That represents a 3.88 percent slope. Dr. Patrick says many things should be considered when

locating an amphibian tunnel. There are predicted models, observed relationships between landscape features, patterns of occurrence and no biology of species. Certain species may only live within certain wetlands and may only move a certain distance from the wetland. Some prefer traveling through forests to open land. Based on this knowledge, the researcher can produce maps available, using available cover and predict where the animals are mostly likely to travel. It just strikes me as odd that the applicant's expert doesn't really quote any of his own research, doesn't say, we've observed amphibians that have traveled from here to there, there was no specific research in that regard.
Lastly, just a couple of other notes or comments, the public parking for the Old Highway trail appears to be located within the Old Highway right of way. Isn't there a fifty foot setback requirement in the zoning regulations for construction next to the Old Highway and wouldn't that apply to construction within the Old Highway as well? Did the Town of Wethersfield express concerns about the project having only one entrance and then someone I believe said emergency vehicles can use the Old Highway for emergency access…

Chairman Block: Excuse me, those are zoning issues, not wetland.

Allison Clark: Okay. A question about the applicant's, there is an abutter list presented in their paperwork, I'm just curious to see if that is a list of people who quality for a pre-blast survey. I think there are a lot of people at Crossings that would like to know if that is the case. Once again, I just want to say I applaud the Commission for denying the application previously, for listening to the testimony and seeing through the unanswered questions and ambiguous answers and the guided and interested testimony. You know what the grounds for denial should be and you cited them. If you have any doubts this time, and if it sounds too good to be true again, and it probably is, then you should deny this application too. I thank Commissioner Clark for the recital of the Connecticut General Statutes pertaining to the Inland Wetlands Regulations. It is relevant, and I hope you all will review them before you make your final decision. Thank you.

Chairman Block: That's the end of the speakers who have signed up, before I go onto other items, is there anybody else who wants to add their name. Seeing none, we will go onto other business, which is the question of setting our next hearing date on this matter. I've had some discussion with the applicant's experts and our experts and it's, they've declared that because CERT is not going to be responding to us before December 14th, it really makes no sense for them to get together and finish their deliberations on, they want to be able to respond to CERT's comments, so they are suggesting that our next meeting by on January 3rd. I must confess that I'm a little disappointed to have so much time pass, but if we're not going to have any pertinent information to listen to. So what is the Commission's interest.

Attorney Boorman: Keep in mind of course that you are in the holidays during that period, if anyone is traveling or things like that, that's relevant. I think that the 3rd or the 8th are dates that could be made available and that the parties would be able to come in and do what they have to do, as they have indicated.

Chairman Block: The third is a Thursday, the 8th is a Tuesday. Do we have a consensus?

Commissioner Clark: The 8th is not good, first day on a new job, but I'll make it.

Chairman Block: All right then, we'll make it for the 8th.

Ron Corcoran: Could I say just a few things here.

Chairman Block: Please be…..

Ron Corcoran: There are several factors here I don't think anyone has mentioned so far. I has to do with the Sylvia Oconte Connecticut Watershed project which has some affiliation or a direct affiliation with the U.S. Wildlife and Environmental Commissions and so forth. The thing is that as far as the water courses up there in that area, they do filter down going northward into a swampy area, and in turn the swampy area does feed into these ponds, a series of ponds on a sort of a hop, step basis. The overflow from the first pond feeds the second pond and in turn the third pong and then enters into a second watercourse in the Cedar Hill Cemetery area. In turn the overflow from that goes out underground I think into the Hog River and I think eventually into the Connecticut River. Now there has been a number of sightings, for example, of river otters who have migrated up the river, came in through this stream process, and had been in the ponds at the cemetery. I've been birding up there for about thirty years and I can give you pretty much on a year to year basis on account of what I have seen, changes that have happened and so forth. I'm not prepared to make any presentations because I'm not at the moment organized and I would like to bring up one or two quickly, of other aspects.

Attorney Boorman: Sir, excuse me, if I may, I'm very interested in that comment, whether or not the otters are a protected species and the ramifications. I would like to suggest since we are going to be continuing this public hearing that you gather your facts, make a complete report at the next meeting.

Ron Corcoran: I certainly will and I have already called, I think it's the Hadley Center for the Conte project……

Attorney Boorman: We will be happy to hear you next time.

Ron Corcoran: And likewise the City of Hartford, there was a meeting there regarding a grant that was presented to the City of Hartford on a selection basis last May and I think that they received a $70,000 grant…..

Attorney Boorman: Sir….

Ron Corcoran: I'm just pointing out that there's, I'm just going to curtail this very quickly if you will give me just one more minute, that's another aspect of this, the $70,000 grant was specifically focused on improving bird, migratory bird projects in habitat within the City of Hartford. The City of Hartford was one of the selections that this process was able to designate as a worthy constituent. Okay, I'll be back, I just wanted to make it clear that are much farther involved than what I think we have considered so far.

Attorney Boorman: Then get your information and bring it to us. Would you please give your name and address for the record sir?

Ron Corcoran: Yes, Ron Corcoran and I live at 167 Roosevelt Street in Hartford, I'm only about ten minutes away.

Chairman Block: Thank you very much sir.

Myra Cohen, 42 Jeffrey Lane: I'm a member of the Town Council but speaking just for myself. If I understood correctly the end of the tunnel has four inch openings, if between the openings is four inches, if that is correct, then a kitten could easily get lost in there.

Chairman Block: Coming back, we have a consensus for our next meeting date to be on January 8th.

Attorney Boorman: 7:00 o'clock.

Chairman Block: Could we have a motion to adjourn and continue?

Commissioner Sadil: Motion to adjourn and to continue to January 8th.

Chairman Block: Second please?

Commissioner Zelek: Second.

The meeting was adjourned at 10:20 p.m.

Respectfully submitted,

Norine Addis,
Temporary Recording Secretary